wherein the mutant is nonlethal compared to wild type SPE-A toxin.

31. (New) The mutant SPE-A toxin of claim 30, wherein the mutant SPE-A toxin comprises two to six amino acid substitutions; and

wherein the substituted amino acids comprise asparagine-20, leucine-41, leucine-42, aspartic acid-45, cysteine-98, or substitution at more than one of these amino acids.

32. (New) The mutant SPE-A toxin of claim 31, wherein the substitutions comprise the substitution of asparagine-20 to aspartic acid, glutamic acid, lysine or arginine; the substitution of leucine-41 to alanine; the substitution of leucine-42 to alanine; the substitution of cysteine-98 to serine, alanine, glycine, or threonine; the substitution of aspartic acid-45 to asparagine, glutamine, serine, threonine, or alanine; or substitutions at more than one of these residues.

33. (New) The mutant SPE-A toxin of claim 32, wherein the substitutions comprise asparagine-20 to aspartic acid, leucine-41 to alanine, leucine-42 to alanine, cysteine-98 to serine, aspartic acid-45 to asparagine, or more than one of these substitutions.

34. (New) The mutant SPE-A toxin of claim 31, wherein the substitutions comprise substitution of asparagine-20, of cysteine-98, or of both asparagine-20 and cysteine-98.

35. (New) The mutant SPE-A toxin of claim 34, wherein the substitutions comprise asparagine-20 to aspartic acid, cysteine-98 to serine, or both asparagine-20 to aspartic acid and cysteine-98 to serine.

36. (New) The mutant SPE-A toxin of claim 34, further comprising substitution of aspartic acid-45, lysine-157, or of both aspartic acid-45 and lysine-157.

37. (New) The mutant SPE-A toxin of claim 36, wherein the substitutions comprise aspartic acid-45 to asparagine or lysine-157 to glutamic acid.

38. (New) The mutant SPE-A toxin of claim 30, wherein the substitutions comprise substitutions in an N-terminal alpha helix, in a domain B beta strand comprising residues 41 through 47 of SPE-A, and at a cysteine.

39. (New) The mutant SPE-A toxin of claim 38, wherein the substitutions comprise the substitution of asparagine-20 to aspartic acid, glutamic acid, lysine or arginine; the substitution of leucine-41 to alanine; the substitution of leucine-42 to alanine; the substitution of cysteine-98 to serine, alanine, glycine, or threonine; the substitution of aspartic acid-45 to asparagine, glutamine, serine, threonine, or alanine; or substitutions at more than one of these residues.

40. (New) The mutant SPE-A toxin of claim 39, wherein the substitutions comprise asparagine-20 to aspartic acid, leucine-41 to alanine, leucine-42 to alanine, cysteine-98 to serine, aspartic acid-45 to asparagine, or more than one of these substitutions.

41. (New) The mutant SPE-A toxin of claim 38, wherein the substitutions comprise substitution of asparagine-20, of cysteine-98, or of both asparagine-20 and cysteine-98.

42. (New) The mutant SPE-A toxin of claim 41, wherein the substitutions comprise asparagine-20 to aspartic acid, cysteine-98 to serine, or both asparagine-20 to aspartic acid and cysteine-98 to serine.

43. (New) The mutant SPE-A toxin of claim 41, further comprising substitution of aspartic acid-45, lysine-157, or of both aspartic acid-45 and lysine-157.

44. (New) The mutant SPE-A toxin of claim 43, wherein the substitutions comprise aspartic acid-45 to asparagine, lysine-157 to glutamic acid, or both aspartic acid-45 to asparagine and lysine-157 to glutamic acid.

45. (New) The mutant SPE-A toxin of claim 30, wherein the mutant has at least one of the following characteristics: the mutant has a decrease in mitogenicity for T-cells, the mutant does not enhance endotoxin shock, the mutant is not lethal, or the mutant is nonlethal but retains mitogenicity comparable to that of the wild type SPE-A toxin.

46. (New) A vaccine for protecting animals against at least one biological activity of wild-type SPE-A comprising: an effective amount of at least one mutant SPE-A toxin according to claim 30.

47. (New) A pharmaceutical composition comprising: a mutant SPE-A according to claim 30 in admixture with a physiologically acceptable carrier.

48. (New) A method for protecting an animal against at least one biological activity of a wild type SPE-A comprising: administering a vaccine according to claim 46 to an animal.

49. (New) A method for reducing symptoms associated with toxic shock comprising: administering a vaccine according to claim 46 to an animal.

50. (New) A mutant SPE-A toxin:

the mutant comprising an amino acid substitution in a domain B beta strand comprising residues 41 through 47 of SPE-A,

wherein the mutant is nonlethal compared to wild type SPE-A toxin.

51. (New) The mutant SPE-A toxin of claim 50, wherein the mutant SPE-A toxin comprises one to six amino acid substitutions; and

wherein the substituted amino acids comprise leucine-41, leucine-42, aspartic acid 45, or substitution at more than one of these amino acids.

52. (New) The mutant SPE-A toxin of claim 51, wherein the substitution comprises leucine-41 to alanine; leucine-42 to alanine; aspartic acid-45 to asparagine, glutamine, serine, threonine, or alanine; or substitution at more than one of these amino acids.

53. (New) The mutant SPE-A toxin of claim 51, wherein the substitution comprises aspartic acid-45 to asparagine.

54. (New) The mutant SPE-A toxin of claim 53, further comprising substitution of asparagine-20, substitution of cysteine-98, or substitution of both asparagine-20 and cysteine-98.

55. (New) The mutant SPE-A toxin of claim 54, wherein the substitutions comprise asparagine-20 to aspartic acid, cysteine-98 to serine, or both asparagine-20 to aspartic acid and cysteine-98 to serine.

56. (New) The mutant SPE-A toxin of claim 50, further comprising a substitution in an N-terminal alpha helix.

57. (New) The mutant SPE-A toxin of claim 50, wherein the mutant SPE-A toxin comprises two to six amino acid substitutions; and

wherein the substituted amino acids comprise asparagine-20, leucine-41, leucine-42, aspartic acid 45, or substitution at more than one of these amino acids.

58. (New) The mutant SPE-A toxin of claim 57, wherein the substitutions comprise substitution of asparagine-20 to aspartic acid, glutamic acid, lysine or arginine; substitution of leucine-41 to alanine; the substitution of leucine-42 to alanine; substitution of aspartic acid-45 to

asparagine, glutamine, serine, threonine, or alanine; or substitution at more than one of these amino acids.

59. (New) The mutant SPE-A toxin of claim 58, wherein the amino acid substitutions comprise asparagine-20 to aspartic acid, leucine-41 to alanine, leucine-42 to alanine, cysteine-98 to serine, aspartic acid-45 to asparagine, or substitution at more than one of these amino acids.

60. (New) The mutant SPE-A toxin of claim 56, further comprising substitution at a cysteine.

61. (New) The mutant SPE-A toxin of claim 60, comprising substitutions at asparagine-20, at cysteine-98, or of both asparagine-20 and cysteine-98.

62. (New) The mutant SPE-A toxin of claim 61, wherein the substitutions comprise asparagine-20 to aspartic acid, cysteine-98 to serine, or both asparagine-20 to aspartic acid and cysteine-98 to serine.

63. (New) The mutant SPE-A toxin of claim 50, further comprising a substitution at a cysteine.

64. (New) The mutant SPE-A toxin of claim 63, wherein the mutant SPE-A toxin comprises two to six amino acid substitutions; and

wherein the substituted amino acids comprise leucine-41, leucine-42, aspartic acid-45, cysteine-98, or substitution at more than one of these amino acids.

65. (New) The mutant SPE-A toxin of claim 64, wherein the substitutions comprise the substitution of leucine-41 to alanine; the substitution of leucine-42 to alanine; the substitution of cysteine-98 to serine, alanine, glycine, or threonine; the substitution of aspartic acid-45 to

asparagine, glutamine, serine, threonine, or alanine; or substitution at more than one of these amino acids.

66. (New) The mutant SPE-A toxin of claim 65, wherein the substitutions comprise leucine-41 to alanine, leucine-42 to alanine, cysteine-98 to serine, aspartic acid-45 to asparagine, or substitution at more than one of these amino acids.

67. (New) The mutant SPE-A toxin of claim 64, wherein the substitutions comprise substitution of asparagine-20, of cysteine-98, or of both asparagine-20 and cysteine-98.

68. (New) The mutant SPE-A toxin of claim 67, wherein the substitutions comprise asparagine-20 to aspartic acid, cysteine-98 to serine, or both asparagine-20 to aspartic acid and cysteine-98 to serine.

69. (New) The mutant SPE-A toxin of claim 63, further comprising substitution at an N-terminal alpha-helix.

70. (New) The mutant SPE-A toxin of claim 69, comprising substitutions at asparagine-20, at cysteine-98, or substitution at more than one of these amino acids.

71. (New) The mutant SPE-A toxin of claim 70, wherein the substitutions comprise asparagine-20 to aspartic acid, cysteine-98 to serine, or both asparagine-20 to aspartic acid and cysteine-98 to serine.

72. (New) The mutant SPE-A toxin of claim 50, wherein the mutant has at least one of the following characteristics: the mutant has a decrease in mitogenicity for T-cells, the mutant does not enhance endotoxin shock, the mutant is not lethal, or the mutant is nonlethal but retains mitogenicity comparable to that of the wild type SPE-A toxin.

73. (New) A vaccine for protecting animals against at least one biological activity of wild-type SPE-A comprising: an effective amount of at least one mutant SPE-A toxin according to claim 50.

74. (New) A pharmaceutical composition comprising: a mutant SPE-A according to claim 50 in admixture with a physiologically acceptable carrier.

75. (New) A method for protecting an animal against at least one biological activity of a wild type SPE-A comprising: administering a vaccine according to claim 73 to an animal.

76. (New) A method for reducing symptoms associated with toxic shock comprising: administering a vaccine according to claim 73 to an animal.

77. (New) A mutant SPE-A toxin comprising a combination of amino acid substitutions at residues asparagine-20, leucine-41, leucine-42, aspartic acid-45, or cysteine-98.

78. (New) The mutant SPE-A toxin of claim 77, comprising substitutions of residue asparagine 20 to aspartic acid, leucine-41 to alanine, leucine-42 to alanine, aspartic acid-45 to asparagine, cysteine-98 to serine, or more than one of these substitutions.

79. (New) The mutant SPE-A toxin of claim 78, comprising amino acid substitutions asparagine 20 to aspartic acid and cysteine-98 to serine.

80. (New) The mutant SPE-A toxin of claim 78, comprising amino acid substitutions asparagine 20 to aspartic acid, aspartic acid-45 to asparagine, and cysteine-98 to serine.

81. (New) The mutant SPE-A toxin of claim 77, further comprising amino acid substitutions at residue lysine-157.

82. (New) The mutant SPE-A toxin of claim 81, comprising amino acid substitutions lysine-157 to glutamate and asparagine 20 to aspartic acid.

83. (New) The mutant SPE-A toxin of claim 77, comprising amino acid substitutions at residues asparagine-20, leucine-41, leucine-42, aspartic acid-45, and cysteine-98.

84. (New) The mutant SPE-A toxin of claim 83, comprising amino acid substitutions of residue asparagine 20 to aspartic acid, leucine-41 to alanine, leucine-42 to alanine, aspartic acid-45 to asparagine, cysteine-98 to serine, or more than one of these substitutions.

85. (New) The mutant SPE-A toxin of claim 84, comprising amino acid substitutions of residue asparagine 20 to aspartic acid, leucine-41 to alanine, leucine-42 to alanine, aspartic acid-45 to asparagine, and cysteine-98 to serine.

86. (New) The mutant SPE-A toxin of claim 77, wherein the mutant has at least one of the following characteristics: the mutant has a decrease in mitogenicity for T-cells, the mutant does not enhance endotoxin shock, the mutant is not lethal, or the mutant is nonlethal but retains mitogenicity comparable to that of the wild type SPE-A toxin.

87. (New) A vaccine for protecting animals against at least one biological activity of wild-type SPE-A comprising: an effective amount of at least one mutant SPE-A toxin according to claim 77.

88. (New) A pharmaceutical composition comprising: a mutant SPE-A according to claim 77 in admixture with a physiologically acceptable carrier.

89. (New) A method for protecting an animal against at least one biological activity of a wild type SPE-A comprising: administering a vaccine according to claim 87 to an animal.

90. (New) A method for reducing symptoms associated with toxic shock comprising: administering a vaccine according to claim 87 to an animal.

91. (New) A mutant SPE-A toxin comprising amino acid substitution at residue leucine-41, leucine-42, aspartic acid-45, or substitution at more than one of these amino acids.

92. (New) The mutant SPE-A toxin of claim 91, comprising amino acid substitution of residue leucine-41 to alanine, leucine-42 to alanine, aspartic acid-45 to asparagine, or substitution at more than one of these amino acids.

93. (New) The mutant SPE-A toxin of claim 91, further comprising amino acid substitution at residue asparagine-20.

94. (New) The mutant SPE-A toxin of claim 93, comprising substitution of residue asparagine 20 to aspartic acid, leucine-41 to alanine, leucine-42 to alanine, aspartic acid-45 to asparagine, or more than one of these substitutions.

95. (New) The mutant SPE-A toxin of claim 93, further comprising amino acid substitution at residue cysteine-98.

96. (New) The mutant SPE-A toxin of claim 95, comprising substitution of residue asparagine 20 to aspartic acid, leucine-41 to alanine, leucine-42 to alanine, aspartic acid-45 to asparagine, cysteine-98 to serine, or more than one of these substitutions.

97. (New) The mutant SPE-A toxin of claim 91, wherein the mutant has at least one of the following characteristics: the mutant has a decrease in mitogenicity for T-cells, the mutant does not enhance endotoxin shock, the mutant is not lethal, or the mutant is nonlethal but retains mitogenicity comparable to that of the wild type SPE-A toxin.